CLAIMS

What is claimed is:

1. A method for assuring compatibility between a formal specification, a front-end debugger program, and a back-end debugger program which interfaces with a debuggee system, the method comprising:

inputting a formal specification into a code generator;

parsing the formal specification;

generating a front-end debugger program portion from the specification; and

generating a back-end debugger program portion from the specification.

10   2. The method of Claim 1, wherein the front-end debugger program runs on a first virtual machine.

3. The method of Claim 2, wherein the front-end debugger program portion comprises Java programming language code.

15   4. The method of Claim 1, wherein the back-end debugger program directly controls and communicates with a second virtual machine.

5. The method of Claim 4, wherein the back-end debugger program portion comprises C language code.

6. The method of Claim 1, wherein the formal specification is a Java Debug Wire

20   Protocol specification.

7. The method of Claim 6, further comprising generating HTML code that contains a human-readable description of the protocol specification.

8. A method of Claim 1 further comprising a communication protocol between the front-end program and the back-end program defined by the formal specification

9. The method of Claim 1, wherein the formal specification is written in a declarative language.

10. The method of Claim 8, wherein the communication protocol is a Java Debug Wire Protocol.

5   11. The method of Claim 8, further comprising generating HTML code from the formal specification that contains a human-readable description of the communication protocol defined by the formal specification.

12. A method for automatically generating front-end debugger interface code and back-end debugger agent interface code that are both compatible with a communication

10   protocol, the method comprising:

writing a formal specification file that contains a description of a communication protocol between the front-end debugger code and the back-end debugger agent code;

inputting the formal specification file into a code generator;

parsing the formal specification;

15   generating the front-end debugger interface code from the formal specification; and

generating the back-end debugger agent interface code from the formal specification.

13. The method of Claim 12, wherein the front-end debugger interface code comprises Java code, the back-end debugger agent interface code comprises C code, and the formal specification comprises a specification language.

20   14. The method of Claim 13, wherein the communication protocol is a Java Debug Wire Protocol.

15. A computer readable medium including computer program code for automatically generating front-end debugger interface code and back-end debugger interface code that are both compatible with a communication protocol, the computer readable medium comprising:

19

computer program code for inputting a formal protocol specification;

computer program code for parsing the formal protocol specification;

computer code for generating front-end debugger interface computer code from the specification; and

5   computer code for generating back-end debugger interface computer code from the specification.

16.   The medium of claim 15, further comprising computer code for generating HTML code containing a human-readable description of the communication protocol.

17.   The medium of Claim 16, wherein the communication protocol is a Java Debug

10   Wire Protocol.

18.   A computer system for automatically generating front-end debugger interface code and back-end debugger interface code that are both compatible with an communication protocol, the computer system comprising:

a processor; and

15   a computer program operating on the processor that reads in a formal communication protocol specification, parses the specification, and generates front-end debugger interface code and back-end debugger interface code, such that the front-end code and the back-end code are fully compliant with the specification and compatible with each other.

20